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TRANSMITTAL LETTER

TO: **Lynn Mailloux**
NYS Office of General Services
Corning Tower, 35th Floor
The Governor Nelson A. Rockefeller Plaza
Albany, NY 12242

DATE: 9/29/2009

ENCLOSED ARE THE FOLLOWING ITEMS:

COPIES	DESCRIPTION
1	Asbestos Report OGS Project # EA927 Lincoln CF New York, NY

TRANSMITTED AS CHECKED BELOW:

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NOTES:

COPY TO: Howard Thompson, Charles Kerzer, Bob Levin, LaTrenda Buchanon, Tryphina Ramsey

SIGNED: Karen Goldman

Adelaide Environmental Health Associates, Inc.

RENOVATION SURVEY FOR ASBESTOS CONTAINING MATERIALS & LEAD BASED PAINT

PERFORMED AT:

Lincoln Correctional Facility
31-33 West 110th Street
New York, New York 10026-4398
Adelaide Project# OGS:09138.00-IN
OGS Project# EA927

PREPARED FOR:

Lynn Mailloux
New York State Office of General Services
Design and Construction
Project Control, 35th Floor, Corning Tower
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242

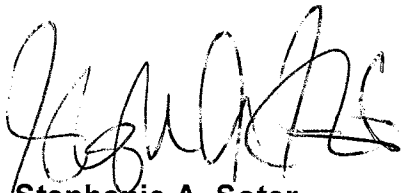
PREPARED BY:

Adelaide Environmental Health Associates, Inc.
1511 Route 22, Suite C24
Brewster, New York 10509

DATED:

September 28, 2009

Submitted by:



Stephanie A. Soter
President

RENOVATION SURVEY FOR ASBESTOS & LEAD

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1.0 EXECUTIVE SUMMARY

At your request, Adelaide Environmental Health Associates representative, Jason Fullum, performed an asbestos and lead inspection at Lincoln Correctional Facility in New York, New York. Adelaide collected seven (7) asbestos samples and one (1) lead paint sample from the above-mentioned area on September 16, 2009.

No samples tested positive for the presence of asbestos.

The following samples tested positive for the presence of lead:

No samples tested positive for lead.

2.0 ASBESTOS FIELD PROCEDURES AND ANALYSIS METHODOLOGY

2.1 INSPECTION

Guidelines used for the inspection were established by the U.S. Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, DOC# 560/5-85-024 and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA). Field information was organized as per the AHERA concept of a homogeneous area (HA); that is, suspect Asbestos Containing Materials (ACM) with similar age, appearance, and texture were grouped together, sampled and assessed for condition.

For the purposes of this inspection, suspect ACM has been placed in three material categories: thermal, surfacing, and miscellaneous.

Surfacing materials are those that are sprayed on, troweled on or otherwise applied to surfaces for fireproofing, acoustical, or decorative purposes (e.g., wall and ceiling plaster).

Thermal materials are those applied to heat pipes or other structural components to prevent heat loss or gain or prevent water condensation (e.g., pipe and fitting insulation, duct insulation, boiler flue).

Miscellaneous materials are interior building materials on structural components, structural members or fixtures, such as floor and ceiling tiles, etc. and do not include surfacing material or thermal system insulation.

2.2 SAMPLING

SURFACING MATERIALS

Surfacing materials were grouped into homogeneous sampling areas. A homogeneous area contains material that is uniform in color and texture and appears identical in every other respect. Materials installed at different times belong to different sampling areas. Homogeneous areas were determined on per floor basis.

The following protocol was used for determining the number of samples to be collected:

- At least three bulk samples were collected from each homogeneous area that is 1,000 square feet or less.
- At least five bulk samples were collected from each homogeneous area that is greater than 1,000 square feet but less than or equal to 5,000 square feet.
- At least seven bulk samples were collected from each homogeneous area that is greater than 5,000 square feet.

THERMAL SYSTEM INSULATION (TSI)

The concept of homogeneous sampling areas applies equally well to thermal insulation as to surfacing material. A "typical" building may contain multiple insulated pipe runs from any combination of the following categories:

- Hot water supply and/or return
- Cold water supply
- Chilled water supply
- Steam supply and/or return
- Roof or system drain

The following protocol was used for determining the number of samples to be collected.

- Collect at least three bulk samples from each homogeneous area of thermal system insulation.
- Collect at least one bulk sample from each homogeneous area of patched thermal system insulation if the patched section is less than 6 linear or square feet.
- In a manner sufficient to determine whether the material is ACM or not ACM, collect a minimum of three bulk samples from each homogeneous insulated mechanical system tee, elbow, and valve.

Bulk samples are not collected from any homogeneous area where the certified inspector has determined that the thermal system insulation is fiberglass, foam glass, or rubber.

MISCELLANEOUS MATERIALS

Miscellaneous materials are grouped into different homogeneous areas and at least two bulk samples are collected from each homogeneous area as per the clarification letter from the EPA and the Professional Abatement Contractors of New York, Inc in November of 2007.

2.3 ANALYSIS

Bulk samples of suspect ACM were analyzed by Polarized Light Microscopy (PLM) with dispersion staining, as described in 40CFR Part 763 and the National Emissions Standard for Hazardous Air Pollutants (NESHAPS).

The New York State (NYS) Department of Health has recently revised the PLM Stratified Point Counting Method. The new method, Polarized Light Microscopy for Identifying and Quantitating Asbestos in Bulk Samples can be found as Item 198.1 in the Environmental Laboratory Accreditation Program (ELAP) Certification manual.

The State of New York ELAP has determined that analysis of NOB materials is not reliably performed by PLM. Therefore, if PLM yields negative results for a non-friable material, it must be confirmed by Transmission Electron Microscopy (TEM) analysis.

All NOB samples were initially analyzed by utilizing TEM methodology.

3.0 CONCLUSIONS AND RECOMMENDATIONS

This survey concluded that the materials listed in Section 1.0 Executive Summary tested ***positive for the presence of***:

No samples tested positive.

4.0 AREAS NOT ACCESSIBLE

Adelaide Environmental Health Associates inspected and sampled materials which were visible and/or accessible to the survey team. Please note that, without prior written consent from the client, Adelaide does not inspect physically inaccessible areas, such as between walls, above fixed ceilings, under concrete slabs, etc. This report makes no representations as to the content of these areas or materials.

All materials present in those not accessible areas shall be assumed positive until tested.

5.0 REPORT CERTIFICATIONS

Adelaide Environmental Health Associates certifies that the information contained herein is based on the physical and visual inspections conducted by Adelaide and data collected during the inspection survey.

6.0 TRANSMITTAL OF BUILDING/STRUCTURE ASBESTOS SURVEY

One (1) copy of the results of the building/structure asbestos survey shall be immediately transmitted by the building/structure owner as follows:

(1) One (1) copy of the completed asbestos survey shall be sent by the owner or their agent to the local government entity charged with issuing a permit for such demolition, renovation, remodeling or repair work under applicable State or local laws.

(2) The completed asbestos survey for controlled demolition (as per Subpart 56-11.5) or pre-demolition asbestos projects shall also be submitted to the appropriate Asbestos Control Bureau district office.

(3) The completed asbestos survey shall be kept on the construction site with the asbestos notification and variance, if required, throughout the duration of the asbestos project and any associated demolition, renovation, remodeling or repair project.

A

Ambient Environmental, Inc.

12 Colvin Ave.
Albany, NY 12206

PH: 518-482-0704
FX: 518-482-0750

August 19, 2010

Mr. Michael Rabideau
New York State Office of General Services
Design & Construction
Corning Tower, 35th Floor
GNARESP
Albany, New York 12242

RE: Hazardous Materials Survey Report
Asbestos and Lead-Based Paint
Lincoln Correctional Facility
Ambient Project Number 100726AD

Dear Mr. Rabideau:

Ambient Environmental, Inc. is pleased to submit the attached Hazardous Materials Survey Report for asbestos and lead-based paint at the above-referenced site. This report includes the procedures and methodologies followed, analytical laboratory results, and applicable conclusions and recommendations.

Ambient appreciates the opportunity to serve the New York State Office of General Services, and we look forward to working with you in the future. In the meantime, if you have questions or comments regarding the information in this report or if we can be of further assistance please do not hesitate to contact us.

Sincerely,
Ambient Environmental, Inc.

Joella Viscusi

Joella Viscusi
President

Enclosure

A

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HAZARDOUS MATERIALS SURVEY

Asbestos and Lead-Based Paint

Lincoln Correctional Facility
31-33 West 110th Street
New York, New York 10026-4398

Survey Date: August 5, 2010

Prepared for:

Mr. Michael Rabideau
New York State Office of General Services
Design & Construction
Corning Tower, 35th Floor
GNARESP
Albany, New York 12242

Prepared by:

Ambient Environmental, Inc.
12 Colvin Ave.
Albany, New York 12206

Ambient Project No. 100726AD

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ATTACHMENTS

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this project was to conduct a hazardous materials survey including asbestos and lead-based paint in certain locations of Lincoln Correctional Facility, New York, New York. The areas inspected included areas to be impacted during the window replacement project, as indicated on the drawings provided by OGS (01 - 04 – 01 - 12). Ambient provided the following services in accordance with the referenced agreement.

Conduct a representative Hazardous Materials Survey in the identified building, which includes:

1. Survey the site building.
2. Identify accessible suspect asbestos-containing materials (ACMs) that were not previously tested.
3. Quantify ACMs, including material condition and location.
4. Collect and analyze bulk samples of suspect friable and non-friable materials to eliminate suspect materials as asbestos containing.
5. Conduct a lead based paint inspection of the area with an RMD XRF lead paint analyzer.

2.0 REPRESENTATIVE ASBESTOS-CONTAINING MATERIAL SURVEY

An asbestos-containing material pre-renovation survey of planned renovation areas was conducted at Lincoln Correctional Facility located in New York, New York. Ambient examined previous reports to determine if adequate sampling was performed in the work areas and collected additional samples that appeared to be deficient. New York State and AHERA Certified Asbestos Inspectors conducted the asbestos survey of the area.

The building was visually inspected for the presence of any additional building materials in the path of renovation that are suspected to contain asbestos. Bulk samples of the newly identified suspect ACMs were collected and placed into individual containers for transport to a National Voluntary Laboratory Accreditation Program (NVLAP) and a New York State Department of Health Environmental Laboratory Approval Program (ELAP)-accredited laboratory for analysis. Materials visibly identified as non-asbestos (fibrous glass, foam rubber, wood, etc.) were not sampled. The asbestos survey consisted of three basic procedures: **1)** conducting a visual inspection of the structures; **2)** identifying homogeneous areas (HAs) of suspect surfacing, thermal system insulation, and miscellaneous materials; and **3)** sampling accessible, friable and non-friable suspect materials.

2.1 Homogeneous Areas

Prior to collecting any samples, HAs were identified and listed to develop a sampling strategy. A homogeneous sampling area can be described as one or more areas of material that are similar in appearance and texture and that have the same installation date and function. The actual number of samples collected from each homogeneous sampling area may vary, based on the type of material and the professional judgment of the inspector.

2.2 Hazard Assessment Factors

From the list of suspect homogeneous materials, a physical assessment was performed for each material on the list. A physical assessment includes evaluating the condition, assessing the potential for disturbance, and determining the friability of each material. Friability is a term used to describe the ease in which a building material inherently lends itself to disturbance. By definition, "friable" materials are those that can be crumbled or reduced to powder by hand pressure when dry. Each material on the list was further classified into one of three categories, which have specific sampling requirements for each category.

Surfacing Materials: Refers to spray-applied or troweled surfaces such as plaster ceilings and walls, fireproofing, textured paints, textured plasters, and spray-applied acoustical surfaces.

Thermal System Insulation: Refers to insulation used to inhibit heat gain or loss on pipes, boilers, tanks, ducts, and various other building components.

Miscellaneous Materials: Refers to friable and non-friable products and materials that do not fit in any of the above two categories such as resilient floor covering, baseboards, mastics, adhesives, roofing material, caulking, glazing, and siding. This category also contains wallboard and ceiling tile.

All confirmed ACMs were then assessed by their condition as good (intact), fair (damaged) or poor (significantly damaged) per Title 40 Code of Federal Regulations Part 763. Material with localized significant damage was also assessed as poor when observed.

2.3 Sampling Strategy

The asbestos inspection was conducted according to New York State Department of Labor Industrial Code Rule 56 guidelines using a minimum number of samples collected from each HA, which also meets the sampling requirement found in 29 CFR 1926.1101.

Sample collection depends on the category that the HA falls into and the amount of material present, as follows:

GUIDELINES FOR DETERMINING THE NUMBER OF SAMPLES TO TAKE		
HA CATEGORY	**HA SIZE**	**SAMPLES REQUIRED**
Surfacing Materials	<1,000 SF	3
	1,000-5,000 SF	5
	>5,000 SF	7 or more
Thermal System Insulation	No Stipulation	3+ (Must also sample all repair patches)
Miscellaneous Materials	No Stipulation	Per AHERA, these materials must be sampled "in a manner sufficient to determine whether or not they contain asbestos" typically 2-3 samples based upon inspector judgment.

If the analytical results indicated that all the samples collected per HA did not contain asbestos, then the HA (material) would be considered a non-ACM. However, if the analytical results of one or more of the samples collected per HA indicate that asbestos is present in quantities of greater than 1 percent asbestos by weight (as defined by EPA), all of the HA (material) would be treated as an ACM regardless of any other analytical results. Material, which can visually be determined to be non-asbestos (i.e., fibrous glass, foam rubber, etc.) by the accredited inspector are not required to be sampled.

Miscellaneous materials require adequately representative sampling, which is typically done by collecting from two to three samples per material. Inspectors typically rely on other survey observations such as the condition, friability, and quantity of material to determine what would be a sufficient amount of samples to accurately evaluate the presence or absence of asbestos content.

Actual collection of a bulk asbestos sample involves physically removing a small piece of material and placing it in a marked, airtight container. Sample containers are marked with a unique identification number, which is also noted in the field notes.

2.4 Laboratory Analytical Results

The samples were sent to AmeriSci New York in New York, New York for analysis. AmeriSci is fully accredited for bulk sample analysis under the Environmental Laboratory Approval Program (ELAP) administered by the New York State Department of Health, ELAP No. 11480 and NVLAP No. 200546-0.

- *Friable Samples* – Friable suspect asbestos containing material samples were analyzed utilizing Method EPA/600/R-93/116 with New York State ELAP 198.1 revision to facilitate compliance with both AHERA and the New York State Department of Health polarized light microscopy (PLM) analytical techniques. All fibers observed were identified to determine whether or not they contained asbestos.
- *Non-Friable Samples* – Non-friable organically bound (NOB) suspect asbestos containing material samples were analyzed utilizing Method EPA/600/R-93/116 with New York State ELAP 198.1 and 198.4 revisions to facilitate compliance with both AHERA and the New York State Department of Health polarized light microscopy (PLM) and transmission electron microscopy (TEM) analytical techniques. These non-friable organically bound samples must be weighed to record initial sample weights, then subjected to muffle furnace and acid bath sample preparation to eliminate the organic constituents. If the remaining inorganic sample residue is 1% or less of the original sample weight, the sample is considered a non-asbestos containing material. If the remaining inorganic sample residue is greater than 1% of the original sample weight then the sample must be analyzed using either PLM or TEM analytical techniques to determine that the sample is an asbestos containing material (positive) or TEM to prove that the sample is a non-asbestos containing material (negative). A non-friable organically bound sample must be proven a non-asbestos containing material utilizing the NYS ELAP 198.4 TEM test method to be in compliance with the New York state Department of Health.

3.0 ASBESTOS RESULTS AND RECOMMENDATIONS

The results of the asbestos survey conducted at Lincoln Correctional Facility, New York, New York indicate that no building materials were found to contain more than 1% asbestos.

Attachment A contains a comprehensive table of bulk samples taken with corresponding results. Sample location drawings are provided in Attachment B. Attachment C contains the complete asbestos laboratory analysis report with chain of custody documentation.

Please Note: *The confirmed asbestos containing materials as defined in New York State Department of Labor Industrial Code Rule 56 and Federal Regulations are those materials containing greater than 1% asbestos by weight. However, some materials collected and analyzed in this inspection do contain trace amounts of asbestos. These materials include:*

- Window Caulk

This information must be conveyed to any contractors working on these materials for compliance with the Occupational Safety and Health Administration 1926.1101. Work that will disturb these materials may require a negative exposure assessment and may include the use of respirators, employee fit tests, an employer respiratory protection program, and an employer medical monitoring program.

The building survey included limited destructive sampling for "hidden" materials. Therefore, the results of this survey are not inclusive of all asbestos containing material that may be present in the pathway of renovations. Only areas conveyed to Ambient by the architect as being disturbed during renovations were sampled. If, during the course of renovation, any material is discovered that is not listed on the table in Attachment A it must be treated as asbestos containing material and handled appropriately or sampled by an inspector according to NYS and EPA regulations.

A copy of the asbestos survey shall be transmitted by the building/structure owner as follows:

- A copy of this asbestos survey shall be sent to the local government entity charged with issuing a permit for demolition, renovation, remodeling or repair work under applicable State or local laws.
- A copy shall be submitted to the Asbestos Control Bureau District Office in Albany, New York.
- The completed asbestos survey shall be kept on the construction site with the asbestos notification and variance, if required, throughout the duration of the asbestos project and any associated demolition, renovation, remodeling or repair project.

4.0 LEAD PAINT INSPECTION

Testing was performed using X-Ray Fluorescence analysis (XRF) of painted construction materials. The RMD LPA-1, manufactured by Radiation Monitoring Devices Inc., was utilized during this survey.

The LPA-1 Lead Paint Analyzer is a complete lead paint analysis system that quickly, accurately, and non-destructively measures the concentration of LBP on surfaces. The LPA-1 relies on the measurement of the K-shell X-rays to determine the amount of lead present in the painted surface. K-shell X-rays can penetrate many layers of paint and allow a measurement of the lead content of paint to be made without being significantly affected by the thickness or number of layers of paint on the surface of the sample.

The LPA-1 has the ability to analyze and compute corrections for the differences in the energy spectrums relating to different substrates. This analysis of the energy spectrum means that the lead paint reading displayed on the instrument already accounts for any substrate effects and correction is not required by the operator. The LPA-1's field of view is limited to a depth of 3/8", deep enough to handle virtually all painted surfaces, but not prone to detect lead objects located behind the surface.

There are two measurement modes of operation in the LPA-1 analyzer namely the "Standard Mode" and the "Quick Mode". In the "Standard" mode, the operator selects a fixed measurement time that remains constant irrespective of the lead signal. In the "Quick" mode, the analyzer automatically adjusts the measurement time to be the least time that is needed to make a definitive measurement with a 95% confidence level (2-sigma). The LPA-1 analyzer will finish a measurement once the 2-sigma confidence level is achieved and the data is statistically meaningful. This time period for conclusive measurements is typically between 1 to 5 seconds, but can extend to a measurement of 60 seconds depending on the action level for abatement. The LPA-1 was utilized in the "Quick" mode for the testing performed.

Upon arrival at the job site and once every four hours or after the day's paint testing work was completed, a "validation test" was performed to assure that the instrument was operating properly. When the "Quick" mode is used for paint testing, the "Time Corrected" mode is used for the "validation test." The "validation test" includes taking a series of three test measurements on the NIST Paint Film Standard (SRM No. 2579) as required by the instrument's PCS. The individual readings and an average of the three readings were recorded and compared to the standards. In all cases, the instrument was functioning within the standard deviation as defined by the manufacturer and the PCS. All validation readings are recorded on the field sample collection logs in the order in which they were taken at the site. If for any reason the XRF does not pass the quality control procedures, it is replaced with an XRF that passes the above criteria for calibration.

The parameters used to interpret XRF results are outlined in the HUD Guidelines and the Performance Characteristics Sheet (PCS). According to the PCS, each XRF result that is greater

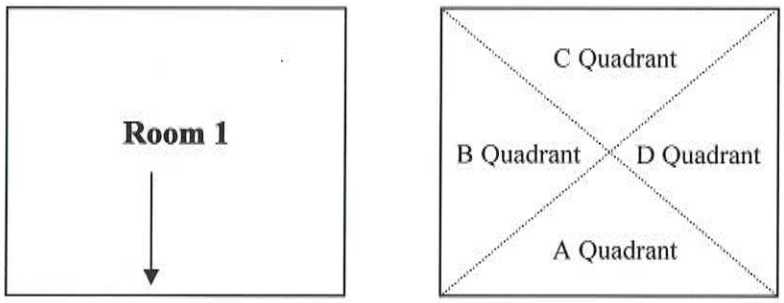
than or equal to 1.0 mg/cm^2 is classified as positive for LBP. It is considered negative for LBP if the result is less than 1.0 mg/cm^2.

When measurable amounts of lead are reported in the XRF result, the paint is classified by OSHA as a lead containing material.

5.0 RESULTS AND RECOMMENDATIONS

Lead based paint and lead containing paint was confirmed in some of the areas in the path of renovation. Location identifiers (reading numbers) were assigned to each room component. Each location sampled has a unique number. The associated sample results will be listed by room number, room location, room name, location in the space and description of material sampled. By convention a sample location is assigned a letter designator for each of the four walls. This divides the space into four equal quadrants, each quadrant consisting of a wall, portion of the floor and a portion of the ceiling. Please see Diagram 1. These letter designators are A, B, C and D. On the diagrams provided, the letter designators are marked for each of the quadrants. In this fashion the sampled space, location in the space and the description of the material sampled can be identified on the attached drawings and associated results table.

Diagram 1



When any construction/renovation is to take place within areas that lead paint or lead containing paint was confirmed, the following response actions must be implemented as part of the construction/renovation project.

The renovation work at Lincoln Correctional Facility may require the disturbance of lead-containing paint. Lead-containing paint was detected on surfaces that could potentially be disturbed by renovation/construction work. Any contractor disturbing a lead-containing material is directed to comply with all applicable laws and regulations governing the disturbance of lead containing materials including but not limited to *Occupational Safety and Health Administration (OSHA)* standards including *Construction Lead Standard 29 CFR 1926.62*. Air monitoring for employee exposures should be performed in accordance with the National Institute for Occupational Safety and Health (NIOSH) 7300 Method or equivalent. As an alternative to air monitoring, the contractor may provide objective data per 29 CFR 1926.62 Section (d)(3)(iv). The contractor shall employ work practices and controls to prevent the occurrence of lead contamination at the Site.

Attachment D contains the lead-based paint results and sample location drawings.

Attachment E contains the company, laboratory, and personnel licenses and certifications.

6.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted during the inspection of the Lincoln Correctional Facility located in New York, New York.

Ambient's selection of sample locations and frequency of sampling was based on observations and the assumption that like materials in the same area are homogeneous in content.

The quantities stated in this report reflect only the materials to be impacted by the planned renovation as stated to Ambient by the Client.

The report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos or lead abatement contractors in locating ACM. Under no circumstances is the report to be utilized as a bidding document or as a project specification document since it does not have all the components required to serve as an Asbestos Project Design document or an Abatement Workplan.

Our professional services have been performed, our findings obtained, and our conclusions and recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This statement is in lieu of other statements either expressed or implied. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

REPORT

LIMITED ASBESTOS, LEAD, AND PCB SURVEY
LINCOLN CORRECTIONAL FACILITY
31-33 WEST 110TH STREET
NEW YORK, NY 10026

Prepared For:

NYS Office of General Services
Serving New York

Executive Department
Office of General Services
The Governor Nelson A, Rockefeller Empire State Plaza
Albany, New York 11725

Prepared By:

Louis Berger and Assoc., P.C.
48 Wall Street, 16th Floor
New York, New York 10005

Final Report
Date: 10/03/13

OGS Project Number: 44472
Work Order Number: 18
LBA's Project Number: 3000761.017
Contract Number: SA099

Louis Berger Associates, P.C.
48 Wall St., 16th Floor, New York, NY 10005
Tel 212 612 7900 Fax 212 363 4341 www.louisberger.com

MEMO

DATE: **October 3, 2013**

TO: **Mr. Bob Levin**

FROM: **Mr. Prakash Saha, Manager, Environmental Services**

Subject: **Limited Asbestos, Lead, and PCB Survey**
Lincoln Correctional Facility, New York, NY 10026
OGS Project Number: 44472
Work Order Number: 18
LBA's Project Number: 3000761.017

Dear Mr. Levin:

Louis Berger Associates, PC (LBA) has completed a material inspection at Lincoln Correctional Facility, located at 31-33 West 110th St, New York, NY 10026. The Inspection included visual observation, material sampling, and laboratory sample analysis of suspect Asbestos-Containing Materials (ACM), Lead Based Paints (LBP) and Polychlorinated Biphenyls (PCBs) associated with proposed renovations.

The attached report presents descriptions and results of the material sampling procedures and visual analysis. Relevant general project information is provided, followed by our findings, assessments and recommendations. Laboratory analysis data and certifications are provided in the Appendices.

If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,

LOUIS BERGER ASSOCIATES, PC

Prakash Saha
Manager, Environmental Services

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Appendices

1.0 EXECUTIVE SUMMARY

Louis Berger Associates, PC (LBA) has performed a renovation specific material Inspection for the presence or absence of Asbestos-Containing Materials (ACM), Lead Based Paints (LBP) and Polychlorinated Biphenyls (PCBs) at Lincoln Correctional Facility, located at 31-33 W 110th St, New York, NY 10026. The intent of this Inspection was to screen for Asbestos-Containing Materials (ACM), Lead Based Paints (LBP) and Polychlorinated Biphenyls (PCBs) that may be impacted during the proposed renovations.

Jeffrey Leed of LBA performed this Inspection on September 20, 2013. Mr. Leed has New York State Department of Labor (NYSDOL) Asbestos Inspector License (Cert# 09-00446) and is an EPA certified lead inspector and risk assessor. The results of the visual inspection and bulk sample analysis determined that the following suspect ACM, LBP and PCB materials may be impacted by the renovation project:

A. ASBESTOS-CONTAINING MATERIAL

Analytical results of the bulk samples collected by Berger indicate that the following materials **contain asbestos** (greater than 1-percent).

- **None**

Analytical results of the bulk samples collected indicate that the following materials **did not contain asbestos** (less than 1-percent);

- Brick Mortar (Wall of Processing Room)

B. LEAD-BASED PAINT

Based upon XRF readings, lead has been confirmed to exist in the following tested combinations:

- **None**

Lead was **not detected** in the following tested combinations via XRF readings:

- Brown Metal Door Frame (Processing Room)
- Brown Metal Door (Processing Room)
- Beige Brick Wall (Processing Room)
- Grey Wood Floor (Processing Room)
- Grey Metal Gate Frame (Hallway)
- Grey Metal Gate (Hallway)
- Grey Concrete Wall (Hallway)

C. PCB-CONTAINING MATERIAL

Analytical results of the bulk samples collected indicate that the following materials **contain PCB** (greater than 50 PPM).

- **None**

Analytical results of the bulk samples collected indicate that the following materials **did not contain PCB** (less than 50 PPM);

- Silicon Door Frame Sealant (Processing Room)

2.0 FIELD INSPECTION PROCEDURES AND SAMPLE ANALYSIS METHODS

ASBESTOS-CONTAINING MATERIAL

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA)

Field information was organized in accordance with the AHERA methodology of homogenous area (HA). During the Inspection, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos. Furthermore, some materials that were not originally specified to contain asbestos may in fact contain this mineral. For example, cementitious pipe insulation and plaster were frequently mixed with asbestos at the construction site for ease of application. Locating all asbestos materials can only be definitively achieved by conducting exploratory demolition and sampling every section of pipe insulation, fitting or valve covering, fireproofing, and other suspect ACM.

Bulk samples of suspect ACM are analyzed using polarized light microscopy (PLM) coupled with dispersion staining, as described in 40 CFR Part 763 and the National Emissions Standard for Hazardous Air Pollutants (NESHAPS). NESHAPS is the standard industry protocol for the determination of asbestos in building materials. A suspect material is immersed in a solution of known refractive index and subjected to illumination by polarized light. The color displays that result are compared to a standardized atlas whereby the specific variety of asbestos is determined. It should also be recognized that PLM is primarily a qualitative identification method whereby asbestos percentage, if any, is estimated. While EPA, New York State, and New York City regulations governing ACM consider materials containing greater then 1-percent as asbestos, accurately quantifying asbestos content below 5-percent has been shown to be unreliable.

The New York State Department of Health has recently revised the PLM Stratified Point Counting Method. The March 25th, 2011 method, "Polarized Light Microscopy Methods for Identifying and Quantifying Asbestos in Bulk Samples" can be found as Item 198.1 in the Environmental Laboratory Approval program (ELAP) Certification manual. Whereas the procedure of analysis for bulk samples that fall into the category of "Non-friable Organically Bound" (NOB) can be found in the March 25th 2011 method "Polarized-Light Microscope Method for Identifying and Quantifying Asbestos in Non-Friable Organically Bound Bulk Samples", Item 198.6 in the ELAP Certification Manual. This category includes any sample in a flexible to rigid asphalt or vinyl matrix (floor tiles, mastic, roofing shingles, roofing felt, etc.). These samples must be "ashed" in a muffle furnace at 480-degrees Celsius (to remove organic matrix), treated with acid (to remove any mineral carbonate), and filtered through a 0.4-micron polycarbonate filter before being analyzed by PLM. The sample must be weighted between each of these steps to track the percent loss of organic matrix.

ELAP has determined that analysis of NOB materials is not reliably performed by PLM. Therefore, if PLM analysis yields results of 1-percent asbestos or less, the result must be confirmed by TEM. For bulk samples that undergo TEM analysis, the March 25th, 2011 method "Transmission Electron Microscope Method for Identifying and Quantitating Asbestos in Non-Friable organically Bound Bulk Samples" must be used and can be found as Item 198.4 in the ELAP Certification Manual. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) NOB sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

All samples are initially analyzed by Polarized Light Microscopy in accordance with Item 198.1 and 198.6 of the ELAP Certification Manual. Samples which yield a negative PLM result and which are classified as a "non-friable" material, are then re-analyzed utilizing TEM methodology in accordance with Item 198.4 of the ELAP Certification Manual. The laboratory performing both these analysis procedures is EMSL located at 307 West 38th Street, New York, NY 10018. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101048-9)
- New York State Environmental Laboratory Approval Program (Lab No. 11506)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 102581)

LEAD-BASED PAINT

Any work which disturbs painted surfaces containing lead shall be performed in accordance with the Occupational Safety and Health Administrations (OSHA) 29 CFR 1926.62 (Lead in Construction Standard) and EPA's 40 CFR 745 regulations. Personal air monitoring should be conducted when disturbing lead based paints and lead containing materials as per 29CFR1926.62 (OSHA).

In addition, all waste generated as part of this project, regardless of the lead content in the paint, should be tested in accordance with the EPA Resource Conservation and Recovery Act (RCRA) to determine the classification of the waste. Under RCRA, any waste material that, when tested by Toxicity Characteristics Leaching Procedure (TCLP), results in a leachate lead concentration of five (5) parts per million or greater must be disposed of at an EPA licensed hazardous waste facility.

The finer renovation debris and paint chips that result from renovation of components with measurable quantities of lead can be tested by TCLP, or can be assumed hazardous waste and disposed of accordingly (not applicable for this project).

The cost of the TCLP depends on the laboratory and location; but typically, a full TCLP analysis may cost from $150 to $350. Any waste material, that when tested by TCLP, results in a leachate lead concentration of five (5) parts per million or greater must be disposed of at an EPA licensed hazardous waste facility. Cost of disposal may range from $5,000 to $7,000 per ton of waste.

POLYCHLORINATED BIPHENYLS (PCBs)

PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until their manufacture was banned in 1979. They have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other industrial applications.

Although no longer commercially produced in the United States, PCBs may be present in products and materials produced before the 1979 PCB ban. Products that may contain PCBs include: Transformers and capacitors, Oil used in motors and hydraulic systems, Fluorescent light ballasts, Adhesives and tapes, Caulking, Plastics, etc.

The PCBs used in these products were chemical mixtures made up of a variety of individual chlorinated biphenyl components, known as congeners. Most commercial PCB mixtures are known in the United States by their industrial trade names. The most common trade name is aroclor.

Polychlorinated biphenyls (PCBs) are regulated pursuant to the United States Environmental Protection Agency Code of Federal Regulations (40 CFR Part 761), the Toxic Substances Control Act (TSCA – 15 U.S.C. 2605), New York State Department of Environmental Conservation 6NYCRR 370-376 and federal Occupational Safety and Health Administration (OSHA) 29CFR 1926 & 1910. These regulations require certain testing and reporting requirements to determine management, recycling and disposal options for PCBs.

3.0 INSPECTION SCOPE AND MATERIAL ASSESSMENT

The areas inspected for ACM materials, LBP and PCB that may be impacted by the proposed renovation:

- Processing Room and Hallway

A. ASBESTOS-CONTAINING MATERIAL

Materials examined during the Berger Inspection included:

- Brick Mortar (Processing Room)

Based upon visual inspection and bulk sample analysis asbestos has been confirmed to exist in the following materials:

- **None**

Asbestos was **not detected** in the following materials via PLM and/or TEM analysis:

- Brick Mortar (Processing Room)

B. LEAD-BASED PAINT

Surfaces examined during the Inspection included:

- Brown Metal Door Frame (Processing Room)
- Brown Metal Door (Processing Room)
- Beige Brick Wall (Processing Room)
- Grey Wood Floor (Processing Room)
- Grey Metal Gate Frame (Hallway)
- Grey Metal Gate (Hallway)
- Grey Concrete Wall (Hallway)

Based upon XRF readings, lead has been confirmed to exist in the following tested combinations:

- **None**

Lead was **not detected** in the following tested combinations via XRF readings:

- Brown Metal Door Frame (Processing Room)
- Brown Metal Door (Processing Room)
- Beige Brick Wall (Processing Room)
- Grey Wood Floor (Processing Room)
- Grey Metal Gate Frame (Hallway)
- Grey Metal Gate (Hallway)
- Grey Concrete Wall (Hallway)

C. PCB-CONTAINING MATERIAL

Materials examined during the Inspection included:

- Silicon Door Frame Sealant (Processing Room)

Based upon visual inspection and bulk sample, PCBs have been confirmed to exist in the following materials:

- **None**

PCB was **not detected** in the following testing combinations within the building via bulk sample analysis:

- Silicon Door Frame Sealant (Processing Room)

4.0 INSPECTION RESULTS

A. ASBESTOS-CONTAINING MATERIAL

The asbestos inspection involved a thorough visual examination of all areas that may be impacted by the proposed renovation project. The following suspect materials were sampled and analyzed for asbestos content by Berger:

HOMOGENOUS MATERIAL	LOCATION	MATERIAL	ASBESTOS CONTENT
1	Processing Room Throughout	Brick Mortar	NAD

Bold = Positive for ACM NAD = No Asbestos Detected

B. LEAD-BASED PAINT

The lead Inspection involved a thorough visual examination of all accessible areas impacted by the proposed renovations:

SAMPLE LOCATION	BUILDING COMPONENT	COLOR	SUBSTRATE	CONDITION	LEAD CONTENT (mg/cm2)
Calibration Check @ 1.0	---	---	---	---	0.9
Calibration Check @ 1.0	---	---	---	---	0.9
Calibration Check @ 1.0	---	---	---	---	0.8
Calibration Check @ 0.0	---	---	---	---	-0.1
Calibration Check @ 0.0	---	---	---	---	-0.1
Calibration Check @ 0.0	---	---	---	---	-0.1
Processing Room	Door Frame	Brown	Metal	Good	-0.2
Processing Room	Door	Brown	Metal	Good	-0.3
Processing Room	Wall	Beige	Brick	Good	-0.2
Processing Room	Floor	Grey	Wood	Good	-0.4
Hallway	Gate Frame	Grey	Metal	Good	0.3
Hallway	Gate	Grey	Metal	Good	1.0
Hallway	Gate	Grey	Metal	Good	0.0
Hallway	Wall	Grey	Concrete	Good	0.0
Calibration Check @ 1.0	---	---	---	---	0.9
Calibration Check @ 1.0	---	---	---	---	1.0
Calibration Check @ 1.0	---	---	---	---	0.9

Bold = Positive for LEAD

C. PCB-CONTAINING MATERIAL

The PCB Inspection involved a thorough visual examination of all areas that may be impacted by the proposed renovations. The following suspect materials were tested for PCB content:

HOMOGENOUS MATERIAL	LOCATION	MATERIAL	PCB CONTENT (PPM)
1	Processing Room	Silicon Door Frame Sealant	ND

Bold = Positive for PCB ND = No PCB Detected

4.2 SAMPLE ANALYSIS TABLE

ACM laboratory analysis results are included in Appendix A.

5.0 AREAS NOT ACCESSIBLE

During the Inspection the following areas were not accessible:

Void Spaces within Walls: No destructive sampling was performed on concealed spaces in walls to access plenum, chases etc. It should be assumed that asbestos, lead and PCB containing materials may exist in these spaces. Any suspect materials encountered during work should be sampled for analysis before work continues.

6.0 CONCLUSIONS AND RECOMMENDATIONS

No ACM, LBP, or PCBs were discovered during this inspection that will be impacted by the upcoming proposed renovations.

The ACM, LBP, & PCB Inspection was conducted at the request of New York State OGS for the proposed renovations at Lincoln Correctional Facility, located at 31-33 West 110th St, New York, NY 10026. Any change in the scope of work will require further investigation to accurately classify any additional ACM, LBP or PCBs resulting from the modified or updated scope of work.

7.0 REPORT CERTIFICATIONS

This report, and the supporting data, findings, conclusions, opinions, and recommendations it contains represent the result of LBA's efforts for the environmental inspection work for the Lincoln Correctional Facility, located at 31-33 West 110th St, New York, NY 10026..

Opinions and recommendations presented in this report apply to site conditions and features as they existed at the time of LBA's site visits, and those reasonably foreseeable. They cannot necessarily apply to conditions and features of which LBA is unaware and has not had the opportunity to evaluate.

The conclusions presented in this report are professional opinions solely upon LBG's visual observations of accessible areas, laboratory test data, and current regulatory requirements. These conclusions are intended exclusively for the purpose stated herein and the site indicated for the project indicated.

Prepared by:

Jeffrey Leed
NYS DOL Inspector

Reviewed by:

Prakash Saha
Project Manager

Adelaide
Environmental Health Associates, Inc.

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Metro Center, 49 Court Street, Binghamton, NY 13901
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E-mail: adelaidemail@adelaidellc.com

RENOVATION SURVEY FOR ASBESTOS CONTAINING MATERIALS AND LEAD BASED PAINT

PERFORMED AT:

Lincoln Correctional Facility
31-33 West 110th Street
New York, New York 10026
Adelaide Project# OGS:13260.00-IN
OGS Project# J0970

PREPARED FOR:

New York State Office of General Services
Design and Construction
Project Control, 35th Floor, Corning Tower
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242

PREPARED BY:
Jason Fullum
June 17, 2014

REVIEWED BY:

Stephanie A. Soter
President

RENOVATION SURVEY FOR ASBESTOS CONTAINING MATERIALS AND LEAD BASED PAINT

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APPENDICES

1.0 BACKGROUND/PURPOSE

Adelaide Environmental Health Associates, Inc. (Adelaide) was retained by NYSOGS to perform an asbestos and lead based paint survey at the Lincoln Correctional Facility in New York, New York. This survey was based on the scope of work provided by OGS. The inspection was performed on June 13, 2014 by Adelaide representative Robert See(certified asbestos inspector and EPA lead risk assessor).

2.0 EXECUTIVE SUMMARY OF INSPECTION RESULTS

Following the scope of work that was given to us, Adelaide inspected rooms C-7 and C-9. Adelaide collected eleven (11) asbestos samples and twenty nine (29) XRF readings. Zero (0) samples/homogenous areas tested positive for asbestos and six (6) XRF readings tested positive for lead based paint.

Summary of Asbestos Containing Material:

Sample #	Material Sampled	Approximate Quantity	Condition	Areas Affected
No samples tested positive				

Summary of Positive Lead Based Paint

Sample#	Sample Location	Component	Substrate	Color	*XRF Reading (mg/cm2)*
6	Room C-7	Lower Wall	Brick	Gray	2.40
18	Room C-7	Lower Wall	Brick	Gray	1.90
19	Room C-7	Column	Brick	Gray	1.80
20	Room C-7	Ceiling	Concrete	White	4.00
22	Room C-9	Upper Wall	Concrete	White	4.60
26	Room C-9	Ceiling	Plaster	White	2.40

Negative Materials List:

- Brick Mortar
- Pipe Wrap on Fiberglass
- Duct Insulation
- Plaster

3.0 ASBESTOS FIELD PROCEDURES AND ANALYSIS METHODOLOGY

3.1 INSPECTION

Guidelines used for the inspection were established by the U.S. Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office

of Pesticides and Toxic Substances, DOC# 560/5-85-024 and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA). Field information was organized as per the AHERA concept of a homogeneous area (HA); that is, suspect Asbestos Containing Materials (ACM) with similar age, appearance, and texture were grouped together, sampled and assessed for condition.

For the purposes of this inspection, suspect ACM has been placed in three material categories: thermal, surfacing, and miscellaneous.

Surfacing materials are those that are sprayed on, troweled on or otherwise applied to surfaces for fireproofing, acoustical, or decorative purposes (e.g., wall and ceiling plaster).

Thermal materials are those applied to heat pipes or other structural components to prevent heat loss or gain or prevent water condensation (e.g., pipe and fitting insulation, duct insulation, boiler flue).

Miscellaneous materials are interior building materials on structural components, structural members or fixtures, such as floor and ceiling tiles, etc. and do not include surfacing material or thermal system insulation.

3.2 SAMPLING

SURFACING MATERIALS

Surfacing materials were grouped into homogeneous sampling areas. A homogeneous area contains material that is uniform in color and texture and appears identical in every other respect. Materials installed at different times belong to different sampling areas. Homogeneous areas were determined on per floor basis.

The following protocol was used for determining the number of samples to be collected:

- At least three bulk samples were collected from each homogeneous area that is 1,000 square feet or less.
- At least five bulk samples were collected from each homogeneous area that is greater than 1,000 square feet but less than or equal to 5,000 square feet.
- At least seven bulk samples were collected from each homogeneous area that is greater than 5,000 square feet.

THERMAL SYSTEM INSULATION (TSI)

The concept of homogeneous sampling areas applies equally well to thermal insulation as to surfacing material. A "typical" building may contain multiple insulated pipe runs from any combination of the following categories:

- Hot water supply and/or return
- Cold water supply

- Chilled water supply
- Steam supply and/or return
- Roof or system drain

The following protocol was used for determining the number of samples to be collected.

- Collect at least three bulk samples from each homogeneous area of thermal system insulation.
- Collect at least one bulk sample from each homogeneous area of patched thermal system insulation if the patched section is less than 6 linear or square feet.
- In a manner sufficient to determine whether the material is ACM or not ACM, collect a minimum of three bulk samples from each homogeneous insulated mechanical system tee, elbow, and valve.

Bulk samples are not collected from any homogeneous area where the certified inspector has determined that the thermal system insulation is fiberglass, foam glass, or rubber.

MISCELLANEOUS MATERIALS

Miscellaneous materials are grouped into different homogeneous areas and at least two bulk samples are collected from each homogeneous area as per the clarification letter from the EPA and the Professional Abatement Contractors of New York, Inc in November of 2007.

3.3 ANALYSIS

Bulk samples of suspect ACM were analyzed by Polarized Light Microscopy (PLM) with dispersion staining, as described in 40CFR Part 763 and the National Emissions Standard for Hazardous Air Pollutants (NESHAPS).

The New York State (NYS) Department of Health has recently revised the PLM Stratified Point Counting Method. The new method, Polarized Light Microscopy for Identifying and Quantitating Asbestos in Bulk Samples can be found as Item 198.1 in the Environmental Laboratory Accreditation Program (ELAP) Certification manual.

The State of New York ELAP has determined that analysis of NOB materials is not reliably performed by PLM. Therefore, if PLM yields negative results for a non-friable material, it must be confirmed by Transmission Electron Microscopy (TEM) analysis.

All NOB samples were initially analyzed by utilizing TEM methodology.

4.0 CONCLUSIONS AND RECOMMENDATIONS

This survey concluded that the materials listed in Section 2.0 Executive Summary tested ***negative for asbestos and positive for lead based paint.***

Lead: *These areas must be either abated or Lead safe work practices must be implemented during the renovation or demolition activities if these areas are to be disturbed*

5.0 AREAS NOT ACCESSIBLE

Adelaide Environmental Health Associates inspected and sampled materials which were visible and/or accessible to the survey team. Adelaide does not inspect physically inaccessible areas, such as between walls, above fixed ceilings, under concrete slabs, etc. This report makes no representations as to the content of these areas or materials.

All materials present in those not accessible areas shall be assumed positive until tested.

6.0 REPORT CERTIFICATIONS

Adelaide Environmental Health Associates certifies that the information contained herein is based on the physical and visual inspections conducted by Adelaide and data collected during the inspection survey.

7.0 TRANSMITTAL OF BUILDING/STRUCTURE ASBESTOS SURVEY

One (1) copy of the results of the building/structure asbestos survey shall be immediately transmitted by the building/structure owner as follows:

(1) One (1) copy of the completed asbestos survey shall be sent by the owner or their agent to the local government entity charged with issuing a permit for such demolition, renovation, remodeling or repair work under applicable State or local laws.

(2) The completed asbestos survey for controlled demolition (as per Subpart 56-11.5) or pre-demolition asbestos projects shall also be submitted to the appropriate Asbestos Control Bureau district office.

(3) The completed asbestos survey shall be kept on the construction site with the asbestos notification and variance, if required, throughout the duration of the asbestos project and any associated demolition, renovation, remodeling or repair project.

LiRo Engineers, Inc.
A LiRo Group Company

REPORT OF
ASBESTOS AND LEAD-BASED PAINT SURVEY SERVICES
FOR
LINCOLN CORRECTIONAL FACILITY
-INVESTIGATE & REPAIR ROOF LEAKS-
31-33 WEST 110TH STREET
NEW YORK, NEW YORK 10026

Prepared For:

New York State Office of General Services
Corning Tower Building
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242

Prepared By:

LiRo Engineers, Inc.
100 Duffy Avenue
Suite 402
Hicksville, New York 11801

November 30, 2016

OGS Project Number ED267
LiRo Project Number 16-071-0295 / TO-10

LiRo Engineers, Inc.
A LiRo Group Company

100 Duffy Avenue, Suite 402, Hicksville, New York 11801 Telephone 516.595.2900 Facsimile 516.681.0589

November 30, 2016

Mr. Howard Thompson
New York State Office of General Services
Corning Tower Building
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242

Re: Report of Asbestos and Lead-Based Paint Survey Services
Investigate & Repair Roof Leaks
Lincoln Correctional Facility
31-33 West 110th Street
New York, NY 10026
OGS Project Number ED267
LiRo Engineers, Inc. Project Number 16-071-0295 / TO 10

Dear Mr. Thompson:

LiRo Engineers, Inc. is pleased to present this report of asbestos and lead-based paint survey services performed at the referenced site. These services were performed in general accordance with our contract for these services and the Task Order issued on November 9, 2016.

We are pleased to be of service to The New York State Office of General Services in connection with this project. If you have any questions or comments, please do not hesitate to contact us.

Sincerely,

LiRo Engineers, Inc.

Zorica Stolica
Environmental Engineer

John F. Eget
Senior Manager

Chuks Okoh Chukwunonyerem
NYCDEP Asbestos Investigator

CITY OF NEW YORK
CHUKWUNONYEREM I. CHUKS-OKOH
CERTIFIED ASBESTOS INVESTIGATOR

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1.0 SCOPE OF WORK

LiRo has performed a field survey and material testing for the presence or absence of asbestos-containing material (ACM) and lead-based paint (LBP) at the Lincoln Correctional Facility located at 31-33 West 110th Street, New York, NY. The survey was limited to the area that will be impacted by the scope of work as noted in "Request of Hazardous Material Testing" received by New York State Office of General Services.

The results of the laboratory analysis for ACM indicate the presence of environmental concerns associated with materials used during the construction of the building. As a result, asbestos abatement activities or special work practices are required to be performed prior to or during the repair to protect workers or the environment from these materials.

The XRF testing for LBP did not indicate the presence of environmental concerns associated with materials used during the construction of the building. As a result, lead abatement activities or special work practices are not required to be performed prior to or during the repair to protect workers or the environment from these materials.

The field procedures, testing methods used during the survey and findings are detailed in the report sections for each of the items of concern.

2.0 ASBESTOS-CONTAINING MATERIALS

2.1 Field Survey Procedures and Sample Analysis Methods

Guidelines used for the inspection were established by the United States Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA). Mr. Chuks Okoh of LiRo performed the field survey and sample collection activities for this survey. Mr. Okoh holds certification from the New York State Department of Labor (NYSDOL) as an Asbestos Inspector and from the New York City Department of Environmental Protection (NYCDEP) as an Asbestos Investigator. A copy of the certificate along with LiRo's Company License are included in Appendix A.

Field information was organized in accordance with the AHERA methodology of homogenous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the potential scope of work. Sampling has included multiple samples of the same materials chosen at random locations. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos. Furthermore, some materials that were not originally specified to contain asbestos may in fact contain this mineral. For example, cementitious pipe insulation and plaster were frequently mixed with asbestos at the construction site for ease of application. Locating all asbestos materials can only be definitively achieved by conducting exploratory demolition and sampling every section of pipe insulation, fitting or valve covering, fireproofing, and other suspect ACM.

Bulk samples of suspect ACM are analyzed using polarized light microscopy (PLM) coupled with dispersion staining, as described in 40 CFR Part 763, the National Emissions Standard for Hazardous Air Pollutants (NESHAPS) and New York State Department of Health Environmental Laboratory Approval Program (ELAP). NESHAPS is the standard industry protocol for the determination of asbestos in building materials. A suspect material is immersed in a solution of known refractive index and subjected to illumination by polarized light. The color displays that result are compared to a standardized atlas whereby the specific variety of asbestos is determined. It should also be recognized that PLM is primarily a qualitative identification method whereby asbestos percentage, if any, is estimated. While EPA and New York State regulations governing ACM consider materials containing greater than 1-percent as asbestos, accurately quantifying asbestos content below 5-percent has been shown to be unreliable.

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before being analyzed by PLM. The sample must be weighted between each of these steps to track the percent loss of organic matrix.

ELAP has determined that analysis of NOB materials is not reliably performed by PLM. Therefore, if PLM analysis yields results of 1-percent asbestos or less, the result must be confirmed by TEM. For bulk samples that undergo TEM analysis, the March 25th, 2011 method "Transmission Electron Microscope Method for Identifying and Quantitating Asbestos in Non-Friable organically Bound Bulk Samples" must be used and can be found as Item 198.4 in the ELAP Certification Manual. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) NOB sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

All samples are initially analyzed by Polarized Light Microscopy in accordance with Item 198.1 and 198.6 of the ELAP Certification Manual. Samples which yield a negative PLM result (1-percent asbestos or less) and are classified as a "non-friable" material, are then re-analyzed utilizing TEM methodology in accordance with Item 198.4 of the ELAP Certification Manual. The laboratory performing both these analysis procedures is AmeriSci New York, located at 117 East 30th Street, New York, New York 10016. The laboratory has received accreditation from the following agencies:

- New York State Environmental Laboratory Approval Program (Lab No. 11480)

2.2 Inspection Scope and Material Assessment

The inspection was characterized by observations of accessible areas. Suspect materials in areas of construction were sampled and quantified.

Materials examined during the inspection included:

- Wall Plaster – Bottom Coat (Grey)
- Wall Plaster – Top Coat (White)
- Pipe Insulation Material (Grey)
- Pipe Insulation Material (White)

2.3 Inspection Results

Analytical results of bulk samples collected during the survey indicate the presence of ACM. A material is considered asbestos when laboratory analysis indicates the presence of greater than 1-percent content in accordance with New York State and EPA Rules and Regulation governing asbestos materials. A summary of the analytical results is listed in Table 1 and the sample chain of custody forms and analytical results are included in Appendix B.

The following materials were determined to be asbestos containing:

- Pipe Insulation Material (Grey)
- Pipe Insulation Material (White)

3.0 LEAD-BASED PAINT

3.1 Field Survey Procedures and Sample Analysis Methods

The random sampling protocol described in the U.S. Department of Housing and Urban Development (HUD) guidance document was utilized in developing the sampling procedures for this LBP survey using a hand held XRF unit. The XRF unit automatically calibrates each time the device is turned on. The calibration is accomplished by sampling the tungsten shield and adjusting its sampling results to match the known response of the tungsten. This calibration was conducted at the beginning and end of testing. Mr. Chuks Okoh of LiRo performed the field survey and XRF sampling activities for this survey. Mr. Okoh holds certification from EPA as a Risk Assessor. A copy of the certificate along with LiRo's Company Certification are included in Appendix A.

Random sampling of a facility or structure that has similar characteristics such as construction materials, painting histories, and date of construction is considered an appropriate methodology. The survey was conducted in accordance with the HUD LBP standard. Paint containing greater than or equal to 1.0 milligram per square centimeter (mq/cm^2) of lead was considered LBP. HUD has provided direction identifying the location of XRF samples using a lettering system. When testing paint using an XRF, the walls of each room are assigned a letter (A, B. C and D). This is to identify the location of each of the samples in that room.

3.2 Inspection Scope and Material Assessment

The LBP inspection involved a thorough visual examination of all areas that may be impacted by the required repair activities in the facility. It should be noted that XRF testing does not differentiate between separate layers of the coating testing and all layers of paint in the areas listed as LBP should be treated as such. The following suspect surfaces were tested for LBP:

- White Paint on Plaster Wall of Pipe Chase

3.3 Inspection Results

XRF testing indicates that white paint in the Pipe chase does not contain lead. Results of the XRF testing are summarized in Table 2.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The results of the laboratory analysis for ACM indicate the presence of environmental concerns associated with materials used during the construction of the building. As a result, asbestos abatement activities or special work practices are required to be performed prior to or during the repair to protect workers or the environment from these materials.

The XRF testing for LBP does not indicate the presence of environmental concerns associated with materials used during the construction of the building. As a result, lead abatement activities or special work practices are not required to be performed prior to or during the repair to protect workers or the environment from these materials.

LiRo Engineers, Inc.
A LiRo Group Company

100 Duffy Avenue, Suite 402, Hicksville, New York 11801 Telephone 516.595.2900 Facsimile 516.681.0589

February 10, 2017

Mr. Howard Thompson
New York State Office of General Services
Corning Tower Building
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242

Re: Report of Asbestos Survey Services
Basement Repairs
Lincoln Correctional Facility
31-33 West 110th Street
New York, NY 10026
OGS Project Number ED267
LiRo Engineers, Inc. Project Number 16-071-0295 / TO 10

Dear Mr. Thompson:

LiRo Engineers, Inc. is pleased to present this report of asbestos survey services performed at the referenced site. These services were performed in general accordance with our contract for these services and the Task Order issued on November 9, 2016.

We are pleased to be of service to The New York State Office of General Services in connection with this project. If you have any questions or comments, please do not hesitate to contact us.

Sincerely,

LiRo Engineers, Inc.

Zorica Stolica
Environmental Engineer

John F. Eget
Senior Manager

Ismael Torres
NYCDEP Asbestos Investigator

LiRo Engineers, Inc.
A LiRo Group Company

100 Duffy Avenue, Suite 402, Hicksville, New York 11801 Telephone 516.595.2900 Facsimile 516.681.0589

February 21, 2017

Mr. Howard Thompson
New York State Office of General Services
Corning Tower Building
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242

Re: Report of Lead Based Paint Survey Services
Basement Repairs
Lincoln Correctional Facility
31-33 West 110th Street
New York, NY 10026
OGS Project Number ED267
LiRo Engineers, Inc. Project Number 16-071-0295 / TO 10

Dear Mr. Thompson:

LiRo Engineers, Inc. is pleased to present this report of lead-based paint survey services performed at the referenced site. These services were performed in general accordance with our contract for these services and the Task Order issued on November 9, 2016.

The results of the field survey activities and laboratory analysis of lead paint chips at the Lincoln Correctional Facility collected in the Officer's Locker Room, Basement Level do not indicate the presence of lead in paint above the United States Department of Housing and Urban Development Guidelines. However, the Occupational Safety and Health Administration (OSHA) considers paint or other surface coating to be lead containing if they contain any lead content. As a result, lead work practices are required to be performed during the construction work activities to protect workers or the environment from these materials. Additional informational regarding the OSHA Lead in Construction Standard may be found in 29 CFR 1926.62. This Standard describes work practices and procedures to be undertaken by contractors working with lead coatings on construction projects. Any contractor performing work in the facility needs to be notified of the presence of LBP prior to starting work activities. Also, LiRo recommends that the contractor's work procedures and practices for LBP be reviewed to determine compliance with the OSHA Standard.

LiRo Engineers, Inc.
A LiRo Group Company

100 Duffy Avenue, Suite 402, Hicksville, New York 11801 Telephone 516.595.2900 Facsimile 516.681.0589

We are pleased to be of service to The New York State Office of General Services in connection with this project. If you have any questions or comments, please do not hesitate to contact us.

Sincerely,

LiRo Engineers, Inc.

Zorica Stolica
Environmental Engineer

John F. Eget
Senior Manager

Attachments:

Attachment 1-Lead Base Paint Sampling Chain-Of-Custody and Laboratory Analytical Data Sheet
Attachment 2- Laboratory Certifications

LiRo Engineers, Inc.
A LiRo Group Company
100 Duffy Avenue, Suite 402, Hicksville, NY 11801 Telephone 516.595.2900 Facsimile 516.681.0589 www.liro.com

Via E-Mail (howard.thompson@ogs.ny.gov)

March 5, 2018

Mr. Howard Thompson
Sr. Superintendent of Construction-NYSCEO
New York State Office of General Services
A.C. Powell S.O.B.
163 West 125th Street, Room 215
New York, New York 10027

Subject: **Report for Asbestos Survey Services**
Repair Water Line, Roof Top Holding Tank
Lincoln Correctional Facility
31-33 West 110th Street
New York, New York 10026
OGS Project Number ED747
LiRo Engineers, Inc. Project Number 16-071-0295 / WO52

Dear Mr. Thompson:

LiRo Engineers, Inc. (LiRo) is pleased to present this report of asbestos survey services performed at the referenced site on February 28, 2018. These services were performed in general accordance with our contract for these services and Work Order 52.

A field survey and material testing was performed for the potential presence of asbestos-containing material (ACM) on the Roof of the Lincoln Correctional Facility, located at 31-33 West 110th Street, New York, New York. The intent of this survey was to sample suspect asbestos materials of concern identified to us by the OGS Representative. The field survey was conducted by Mr. Chuks Okoh of LiRo. Mr. Okoh is certified by the New York State Department of Labor (NYSDOL) as an Asbestos Inspector. A copy of Mr. Okoh's Asbestos Certificate is included in Attachment A along with copies of LiRo's Asbestos Contractor's License and our Subcontractor Laboratory's Certifications.

During the survey several types of suspect ACM were identified and sampled for asbestos content. The results of the laboratory analysis indicate that the sampled materials are non-asbestos containing. The analytical results are presented in Appendix B and summarized in Table 1. Suspect ACM sampled during the survey included:

- Pipe Insulation Material
- Metal Pipe Elbow (Patch)

Samples of non-friable asbestos containing materials were analyzed by polarized light microscopy (PLM) in accordance with Item 198.1 and 198.6 of the New York State Department of Health Environmental Laboratory Approval Program (ELAP). If the results of analysis by Item 198.6 indicate the material to

be 1-percent of less asbestos, the result is reported as "inconclusive". Inconclusive results require additional analysis by transmission electron microscopy in accordance with ELAP Item 198.4. The laboratory performing the analysis was AmeriSci New York, located at 117 East 30th New York, New York.

LiRo pleased to be of service to The New York State Office of General Services in connection with this project. If you have any questions or comments, please do not hesitate to contact us.

Sincerely,

LiRo Engineers, Inc.

Zorica Stolica
Environmental Engineer

Robert Soldano
Project Manager

Attachments: Appendix A: Asbestos Contractor's License, Employee Certifications, and Laboratory Certificates

Appendix B: Asbestos Bulk Sampling Chain-Of-Custody / Survey Forms and Laboratory Analytical Data Sheets

Table 1: Summary of Asbestos Bulk Sample Results